Environmental Accounting as a Tool for Defining and Assessing Public Policies

La contabilità ambientale come strumento per la formulazione e la valutazione delle politiche pubbliche

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Riassunto: La Contabilità ambientale è una disciplina ben definita nell'ambito della statistica ufficiale, finalizzata a descrivere in modo sistematico le interazioni tra economia ed ambiente. I conti ambientali contengono informazioni ad alto valore aggiunto per i decisori politici, in quanto costruite in modo coerente con le informazioni relative al funzionamento dell'economia fornite dalla contabilità economica, e quindi adatte ad un utilizzo congiunto. Le possibilità di utilizzo di questo tipo di informazione sono state finora esplorate solo in parte dai decisori politici. In Italia vi è una crescente attenzione da parte dei decisori politici e numerose sono le iniziative, soprattutto a livello locale. Di cruciale importanza per un corretto uso dell'informazione a fini di *policy* è la coerenza, a tutti i livelli, con gli standard della statistica ufficiale.

Keywords: environmental accounting, policy, supply and demand of information.

1. Introduction to environmental accounting

"Environmental accounting" (EA) is a well defined discipline in the field of official statistics: National Statistical Institutes (NSIs) are since long committed with producing on a regular basis a harmonised system of environmental accounts, which describe the various aspects of economy/environment interactions. Table 1 briefly presents a typology of Environmental Accounts (EAs). Even though some areas still exist which need further methodological development as well as international harmonisation and agreement, for most of the EAs currently being produced in NSIs a well-defined and agreed upon methodological reference framework does exist, providing concepts, definitions, classifications, accounting schemes and calculation methods.
Historically, the idea of EA was born inside the community of the producers of statistics, rather than in that of the users. Indeed, EA responds in a very refined way to a demand of information which was, and often is, quite rough: the experts anticipated the probable evolution of the needs of the policy makers, and designed information tools with high value added for decision-making processes. This value added consists in

providing information on man/nature interactions structured in a way that it can be directly compared to National Accounts (NAs). Though it is not possible yet to talk about a praxis of EAs utilisation for policy purposes, there are evident signals of a growing awareness in this sense and of a research of how to take advantage of the richness of the actual and potential information provided by EA.

Table 1: *Key features of the environmental accounting framework actually adopted in the European Statistical System*

Main types of accounts	Main objectives
Economy-Wide Material Flow Accounting (EW-MFA)	To construct an economy-wide balance sheet inclusive of all material flows between the economic system and the natural system (in both directions), in order to quantify the extent to which the economy makes use – according to its own trends – of natural resources and environmental media, including those located abroad
NAMEA[(1)] type flow accounts	To account for the physical flows taking place between the economic system and the natural system (atmospheric emissions, intake of natural resources, etc.) in correspondence with the specific economic activities that generate them, in particular – for a given activity – side by side to distinct economic flows such as production, value added, etc.
Economic accounts for the environment (SERIEE[(2)] = EPEA[(3)] + RUMEA[(4)])	To account for the economic transactions connected with the environment (environmental protection expenditures, resource use and management expenditures, environmental taxes, etc.); to describe the economic activities that produce goods and services for the environment ("eco-industries")
Asset accounts in physical terms	To construct an asset account in physical terms for a given natural resource (initial stock, increases and decreases during the accounting period – both natural and anthropogenic –, closing stock); quality aspects are taken into account as appropriate by means of indicators or by breaking down the account by quality classes
Integrated environmental and economic accounting for natural resources (NRIEEA)	To construct – for a given natural resource of interest (e.g. forests, subsoil assets, etc.) – an accounting system made up of NAMEA type flow accounts, Economic accounts for the environment (EPEA, RUMEA) and Asset accounts in physical terms

Source: Costantino (2005).

2. The "demand" of environmental accounts in Italy

At the international level, the Rio conference of 1992 made it clear that, in order to ensure environmental sustainability, two different aspects deserve attention:

a) decision and programming, characterised by activities aimed at modifying the phenomena deemed relevant for sustainability;
b) preparation of information, characterised by activities aimed at providing a suitable representation of the relevant phenomena, making thus available to decision-makers the necessary knowledge support.

In Europe, in 1994 the Commission of the EU, in its "Directions for the EU on Environmental Indicators and Green National Accounting" stated that "no powerful policy-guiding instruments exist to direct EU policies in the right direction", and envisaged several actions to develop such instruments, among which a European

(1) National Accounting Matrix including Environmental Accounts.
(2) Système Européen de Rassemblement de l'Information Economique sur l'Environnement.
(3) Environmental Protection Expenditure Account.
(4) Resource Use and Management Expenditure Account.

System of Environmental Pressure Indices (ESEPI), a European System of Integrated Economic and Environmental Indices (ESI) and "satellites of the National Accounts".
The distinction between policy and information for policy-guidance is reflected in Italy in most of the initiatives concerning EA, especially at the General Government level. The first expression of demand from the policy side in Italy was the National Agenda XXI Action Plan, approved by CIPE[(5)] at the end of 1993, within which the development of a national system of EAs was identified as one of the necessary actions for designing and enacting a strategy for sustainability. This vision was taken up and reinforced subsequently in the Italian Strategy for Sustainable Development, approved in 2002 by CIPE. Another initiative worth mentioning is a "round table" held in November 2001 at the Ministry of the environment in order to collect inputs directly from the main policy makers on their actual information needs that can be matched through environmental accounts.
An interest in EA by local policy-makers was first highlighted in the mid-'90ies, by the CONTARE[(6)] project, finalised to the definition of a regional accounting system as a support for regional administrations. It represents the first Italian local-level EA initiative, aimed at realising "a tool for supporting the assessment of environmental policies by defining a Decision Support Model for the environmental accounting and the management and control of the environmental expenditure"[(7)].
Towards the end of the '90ies, a strong attention for the discipline begun being shown by the Parliament and by local administrations, through a series of bills proposed during the former and the current legislature, aimed at introducing EA as a compulsory tool for Central and Local Government. The first bill was presented in March 1998[(8)]. Even though only going near, but not attaining, the goal of becoming actual laws, these bills have had the effect of strongly stimulating some local administrations to start experimentation exercises. Since it is a quite recent instrument, not yet standardised, let alone compulsory, EA at this level still is not much widespread, and these voluntary experimentations are quite heterogeneous. The first project at local level following the presentation of the bills, was developed thanks to an initiative of the Bologna Province for the implementation of an EA system at province and inter-municipality level. Starting in 2000, a growth of local-level EA experimentations has then taken place, also thanks to the provision of national and EU financial assistance. The following experiences are among the most widely known:

- the projects financed by the Ministry of the Environment (which meanwhile had added "Territory Protection" to its name), in the framework of the 2000 Tender for the co-financing of SD programs and Agenda XXI implementation[(9)];
- the applications done in the framework of the *City and Local Environmental Accounting and Reporting project* (CLEAR), financed in 2001 by the EU as a LIFE

[(5)] Interministerial Commitee for Economic Programming.
[(6)] Interregional project, carried out by the Regions Toscana (heading it), Piemonte, Liguria, Emilia Romagna and by the autonomous provinces of Trento and Bolzano, in cooperation with the Ministry of the Environment, Istat and APAT. The project was started in 1996, in the framework of the 1994-1996 triennial Environment Protection Program of the Ministry of the Environment.
[(7)] Our translation. http://www.rete.toscana.it/sett/pta/strumenti/contare/html/livello_intermedio/introduzione.html.
[(8)] http://www.senato.it/leg/13/BGT/Schede/Ddliter/10070.htm.
[(9)] These are 12 projects for the experimentation of local-level EA in the territories of: the municipalities of Rome, Cinisello Balsamo, Mantova, Lecco, Grosseto, Massa; the association of municipalities composed by Trecastagni, Nicolosi, Pedara and Viagrande; the provinces of Lodi and Milan; the mountain communities Valle del Santerno and Volturno (see Ministero dell'Ambiente, 2003).

environment project, which lead to the realisation and approval of documents named "environmental budgets" by all participating local administrations[(10)];

- the project on EA experimentation of the Municipality of Rome, named CONTAROMA[(11)].

The list of local administrations that embark in experimental EA exercises tends to become longer mainly with initiatives inspired to the CLEAR[(12)] project, which currently seems the most successful one, and with other original applications [(13)].

At the national level, another attempt at establishing an EA module for systematic consideration by the policy-makers is being done with a bill presented in 2004, aiming at the utilisation of a statistical aggregate called Gross Material Domestic Product[(14)].

The most recent initiative directed at clarifying the demand for EAs and the possible uses of EA information is an ongoing joint project by Istat and the Ministry of the Economy and Finance. Interim results of this project are reported in a methodological document, discussed in a seminar hosted by the National Council of the Economy and Labour[(15)].

The different initiatives mentioned above all have in common, as far as their contents are concerned, that they call for more EA information and promote its development starting from policy needs; however, they can be categorised for study purposes into two wide typologies, according to the way they formulate these needs and their immediateness in stimulating the supply side of EA:

1. those which have a purely institutional character, i.e. which, while affirming important principles of general purpose, do not contain demands for specific EA data and do not envisage actual ways how to use this kind of statistical information. In these cases, references to well-defined EA aggregates are only limited to the setting of strategic targets, without foreseeing, where the aggregates are actually not available, their development. This typology comprises the Italian 1993 Agenda XXI Action Plan and the 2002 National Strategy for Sustainable Development;
2. those which, being strongly oriented to the formulation of actual policies, design, in a more or less stringent and concrete manner, the possible uses of EAs, by making reference to well defined aggregates contained or derivable from the accounting schemes. In these cases, possible missing EA tools which are perceived as necessary for actual policy design, are often implemented as part of the same initiative. This category encompasses the bills under discussion in the Parliament, as well as some of the local-level experimentations and the Istat-MEF project.

In the following paragraphs, we briefly highlight the characteristics of the initiatives of the second type (§§ 3-5), those most oriented to actually support the policy maker; finally we make some synthesis remarks and draw some conclusions (§ 6).

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(10) These are 18 local governments: the Municipalities of Ferrara (which headed the project), Bergeggi, Cavriago, Grosseto, Modena, Pavia, Ravenna, Reggio Emilia, Rovigo, Salsomaggiore, Varese Ligure, Castelnovo ne' Monti and the Provinces of Bologna, Ferrara, Modena, Neaples, Reggio Emilia and Turin (http://www.clear-life.it/).

(11) http://www.comune.roma.it/was/wps/portal/!ut/p/_s.7_0_A/7_0_21L?menuPage=/Comune_Agenzie_e_Aziende/Dipartimenti/Dipartimento_X/Agenda_21/Il_percorso_per_lo_sviluppo_sostenibile/Il_Progetto_CONTAROMA/ .

(12) As for instance in the case of the Lucca Municipality (http://www.comune.lucca.it/I/3B5FD076.htm).

(13) As for instance in the cases of the Macerata and Pesaro Municipalities.

(14) http://www.senato.it/leg/14/BGT/Schede/Ddliter/21336.htm.

(15) A constitutional consultative body for the Houses and the Government.

3. Legislative initiatives

3.1 The bill on "Central and Local Government Environmental Accounting"

The political debate going on in Italy on "public" environmental accounting emphasises, as anticipated in the previous paragraph, a need of frameworks that are suitable for structuring not only the production (EA reporting schemes) but also the use of statistical information in decision taking and policy making (EA utilisation methods). Such an evolution towards user-oriented frameworks is highlighted by environmental accounting concepts/frameworks that are embedded/envisaged in the bill discussed in the Italian Parliament under the title "Central and Local Government Environmental Accounting"[(16)]. This bill, which has given impetus to the debate, is focused on environmental accounting in a broad sense for General Government planning towards an environmentally sustainable development path. The bill aims at introducing the so called "Documents concerning the ecological sustainability of development" (DESDs) as new planning tools to be approved by Central and Local Government. These documents should include information and targets concerning the environmental dimension of development in a sustainability perspective; furthermore, they should be approved – by each unit of General Government (i.e. State, Regions, Provinces, Municipalities) – along with the approval of the corresponding financial and economic planning documents. Besides this *environmental planning tool* - i.e. the DESDs - the bill aims at introducing an *environmental information tool* to be approved on a regular basis for supporting the elaboration of the DESDs: such a tool is a system of official statistics EAs to be adopted by each unit of General Government.

The regular approval of both tools aims at introducing a twofold parallelism:

1. between economic and environmental planning, i.e. between financial and economic planning documents on the one hand and the DESDs on the other hand;
2. between information tools supporting economic and environmental planning, i.e. economic accounts on the one side and the EAs on the other side.

The bill does not specify the contents nor the frameworks for the DESDs and the EAs it envisages. Nonetheless, it gives a number of general criteria and indications to that end.

As far as the DESDs are concerned, the following criteria are pointed out:

- they should contain a selection of results and information provided by the EAs;
- the selection of results and information from the EAs should vary according to the the different levels of General Government;
- the results and information extracted by the EAs should be organised in a way that would allow a comparison with financial and economic planning documents;

[(16)] In 1998 a first bill, with a similar denomination, was presented in the Senate, followed by four more bills, almost identical to the first one. Following a common examination process, an amended text based on the first bill was passed by the Senate, but not by the Chamber – the other body of the Italian Parliament – within the period of office of the previous legislature. In 2001 the same text previously passed by the Senate was presented again and presently is under discussion again at the Senate. Similarly to what had happened before, three more bills have been presented soon after the reiterated presentation of the first bill. Although these three bills are slightly different from the first one, even in this case a common examination process for all the four proposals has been set up by the Parliament. The latest version of the bill puts most of the emphasis on framework experimentation, which has to be followed by an *ad hoc* interinstitutional commission.

- the EAs results and information should be included in the DESDs gradually, taking into account the state of the art and soundness of official statistics environmental accounting.

As far as the EAs are concerned the bill gives the following main indications:

- they have to be produced within the National Statistical System;
- they should describe the interactions between economy and environment, with particular reference to what is known as environmental "pressures" and "responses" in the DPSIR model [1];
- the content and framework of the EAs should vary according to the institutional level of General Government by which they are adopted;
- the content and framework of the EAs should be defined and up-dated taking into account the state of the art of official statistics in this field at the international and national levels.

The bill also calls for operational frameworks which are to be defined subsequently, based on the above criteria and indications, by means of laws by decree to be enacted once the bill is passed.

The bill described above highlights the demand of environmental accounts coming from policy makers, who are interested in having the support of official statistics in decision taking and planning at the different levels of General Government. One crucial point is that there is a twofold need of user-oriented frameworks; these are:

1. an accounting framework for defining and organising the EAs to be adopted by the different levels of General Government;
2. a framework for identifying and organising within the DESDs of the different levels of General Government the information and results to be extracted from the EAs.

This need of frameworks is also emphasised by what appears from the experimental projects launched so far by Local Government units in an attempt to implement the bill on a pilot basis at the local level: these projects are indeed characterised by heterogeneous and sometimes confused approaches. As far as the EAs, in particular, are concerned, it appears also from the same experimental projects that a user-oriented accounting framework for Central and Local Government units can be defined by selecting and organising relevant components from accounting frameworks and modules developed at the international level within official statistics. While it appears that there is no need of completely new frameworks, the experience made so far also suggests, however, that there is a need of guidelines for a proper application of existing standardised approaches (Costantino et al., 2004).

3.2 The bill on "Gross Material Domestic Product Calculation System"

As anticipated above, in 2004 a bill has been presented in the Parliament, aiming at defining and introducing a system for the calculation of a statistical aggregate called Gross Material Domestic Product (GMDP). This aggregate, expressing the results of the economic activity of a country in terms of total physical weight, should be calculated on

[1] According to the DPSIR model the economy-environment interaction includes distinct stages: Driving forces (human activities causing environmental pressures), Pressures (direct stresses from the economic system on the natural environment), State (actual environmental conditions), Impact (effects on the economic system due to changes in environmental conditions), Responses (actions to cope with environmental problems).

the basis of a Physical Input/Output Table (PIOT). According to the bill, this EA instrument is supposed to make available data not otherwise provided, by thoroughly describing not only the material flows from the natural environment to the economy and vice versa, but also the circulation of matter between the various branches and institutional sectors of the economy, in a manner coherent to monetary national accounting. Though not going into details, the proposal hints at the possible targets of the utilisation of this tool: it would help respect the obligations concerning environmental quality, by promoting the saving of energy and materials, the equilibrium of (material) cycles, the respect of biodiversity, thus enhancing the health of humans and of the biosphere and the quality of products and – going beyond environmental policy – it would help fight against tax evasion[(17)].

4. Local Government projects on environmental accounts

4.1 Main contents of the projects developed so far

As hinted above, most of the Italian local government EA projects have been inspired by the bill discussed under § 3.1. Mainly focused on EAs – not on DESDs –, they show a prevailing orientation in the approach followed:

- two types of EAs are most commonly considered: the so-called "physical accounts", which describe the environmental situation in the territory governed by the local authority, through a set of selected physical indicators, mainly of "pressure" and "state"; the so-called "monetary accounts", which record the expenditure incurred by the authority for environmental protection and resource management purposes, thus describing the "responses" implemented by the authority in order to fight environmental degradation and resource depletion in the territory it governs.
- in order to develop the EAs, the intention is to make reference to EA approaches and modules developed within the international and national official statistics context.

The following remarks can be done on the projects finalised so far:

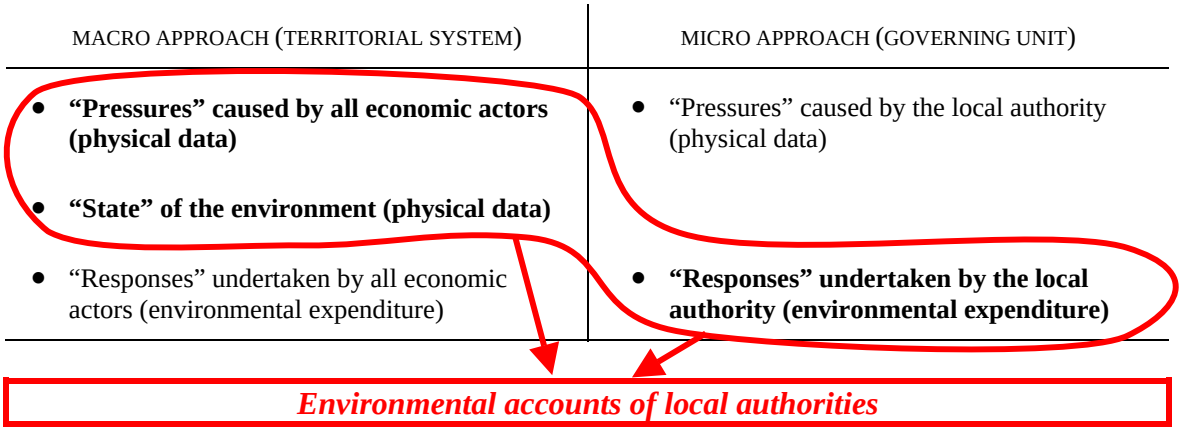
- although it is the intention of most projects to make reference to standardised international EA approaches, there is a great heterogeneity in methods and results This may produce a certain level of confusion, to the extent that the content of international definitions, classifications and accounting schemes is modified while keeping the original labels;
- many of these projects are in fact exclusively centred on the calculation of environmental expenditures carried out by the local authority; this in practice implies making a re-classification of the public expenditure concerned, based on the budget analysis method. In order to do that a number of projects make reference to the EPEA and in particular to the Classification of Environmental Protection Activities and expenditures (CEPA);
- the distinction between the authority as an economic unit (micro level) and the territorial system it governs (macro level) is not always taken in due consideration,

(17) The policy use of Material Flow Accounting tools is being currently promoted at the international level by the G8, following whose invitation the OECD took a lead role in the work on this topic. A very advanced example in the use of these tools is that of the Japanese Government, who is implementing its "Basic Plan for Establishing a Sound Material-Cycle Economy'.

though it is a very relevant one in this context, the latter comprising a large number of entities in addition to the authority itself;

- several projects envisage the calculation of environmental expenditures carried out by the local authority, recorded in the monetary accounts, and the development of a system of "pressure" and "state" indicators, included in the physical accounts, referred to the territory managed by the authority. As shown in Figure 1, such an approach is a sort of hybrid between a micro and a macro one: environmental expenditures carried out by the local authority correspond to a micro perspective, while the environmental pressures and the state of the environment observed in the whole territory managed by the same authority correspond to a macro perspective.

Figure 1: **EAs of local authorities: the most common approach in Italy**



Source: Istat, Ministero dell'Economia e delle Finanze (2005).

A special case is represented by the CONTARE project, chronologically the first EA project at sub-national (namely, regional) scale. This project envisages an EA system aimed at supporting decision, with a focus on infrastructural environmental policies. In very schematic terms, it foresees the following information systems:

1. A system of context indicators: physical and monetary indicators of driving forces, pressures and responses;
2. A system of indicators for measuring the effects of regional policies: physical and monetary indicators of realisation, result, impact, efficiency, efficacy.

The context indicators are structured according to official statistics EA standards: CEPA for environmental expenditure, environmental themes as identified in physical EA tools such as e.g. NAMEA, etc., for phisycal indicators. The policy-effect indicators are made comparable to the context ones by the use of the same conceptual standards, such as definitions and classifications. This is how information is organised in. As for the assessment of this information – i.e. its utilisation – CONTARE envisages a number of methods for reading it, which guide the user in its interpretation and analysis. In practice, this results in a quite complex system, more suited for the use by an analyst than by a policy-maker.

4.2. Open issues

A number of issues can be highlighted concerning both the contents of the EAs as formulated in the Italian local-level experimentations (technical problems) and their utilisation for policy.

A first main technical issue regarding the contents of local-level EA concerns the relationship with the standards of official statistics. A very significant case that can be used for exemplifying this problem is that of environmental expenditure, which as said above is a major component of the experimentations. All applications acknowledge that the EPEA account, and its CEPA classification, are the reference standard for quantifying this expenditure. However, this acknowledgement is often purely formal: whenever a standard does not correspond to a specific information need of the local government, it is perceived as inadequate or inapplicable, and alternative classifications are proposed, or the CEPA is applied wrongly, twisting and stretching it in order to make all kind of expenditures fit into it. Thus doing, the local administration ends up with missing the possibility of attaining the following two fundamental objectives:

- to be able to evaluate its trends with respect to the general tendencies, i.e. to know what the situation of the local community and territory is in comparison with the various reference contexts (e.g regional, national, European), because the essential prerequisite of comparability of data through space and time is overlooked;
- to allow the formation of correct and independent opinions in the public through an effective and transparent communication.

It is important to notice that the need of preserving the comparability of the data with the relevant official statistics and that of satisfying possible specific information requests of the users are not in contrast. These needs can indeed easily be reconciled by adopting some simple technical adjustments to the data collection and reporting systems. It is also to be noticed that the lack of actual conformity to the standards of official statistics has not lead to the formation of a single model to be regarded as an alternative one stemming from the users' real needs; on the contrary, a variety of heterogeneous approaches have been formulated, that makes the results of the different experimentations not even comparable among them.

Problems are present in the local-level experimentations also as far as the possibilities of using the information for policy are concerned. A first issue concerns the often doubtful correspondence between the declared intention of developing a given EA tool, i.e. the needs that this is intended to satisfy, on the one hand, and the actual information content of the same tool, on the other hand. According to the declared intention, the tool is developed as a support to the definition, monitoring and assessment of local governments' policies, as well as transparent communication with the general public. Here relevant questions are: which physical indicators referred to the territory governed by the local authority are correlated to a given policy of the same authority? which expenditures are attributable to the same policy, so that they can be considered in connection with the physical indicators? In relation to these questions, it can be noticed that a system articulated on heterogeneous components such as that described above does not allow a clear assessment of the degree of success of a local government's policies. Indeed, the changes described by the indicators referred to the territory can be, and usually are, determined not just by the environmental policy of the local authority but also or even only by other factors (e.g. policies by upper or lower government levels, other policies of the same government, voluntary actions of the units present in

the territory, the economic situation, etc.). A first step towards overcoming this problem can be taken by introducing in the system environmental performance indicators that can directly be referred to the policies and enable to verify their incidence on the evolution of the target phenomena on the territory. Similarly to what suggested in the CONTARE project, some indicators should be included in the "physical accounts" part of the system that directly represent the output of the activities carried out thanks to the expenses recorded in the "expenditure accounts" part. Moreover, they should be defined in a way comparable to the corresponding physical indicators referred to the territorial context. Appropriate analytical methods should also be used in order to correctly assess the policies. Finally, a simple interpretation system should be defined, such that the policy-maker need not become an expert analyst to be able to grasp the relevant messages.

A second set of issues relating to the possible policy uses of the EAs produced within local-level experimentations concerns the processes/ decisional bodies supported by this information and the way it supports them. The experience gathered so far does not appear as a sufficiently solid basis in the direction of a sound and systematic utilisation. Currently, the greatest emphasis in the experimentations is on EA as a tool for communicating local government's strategies and policies..

5. Environmental accounting for supporting regional development policies

Istat and the Ministry of Economy and Finance (MEF) are currently carrying out a project aiming at setting up a system of regional EAs as a tool for defining, monitoring and assessing public policies. In particular, the project is focused on development policies, intended as those favouring the accumulation of one or more of the various forms of capital (natural, human, social, man-made, institutional…) needed by a community to increase its welfare. The working method adopted is the direct comparison between the "demand" of information for policy use (expressed by the Department of MEF in charge of development policies) and the "supply" of EA-type information (as provided by the National Accounts Department of Istat). At the current state of development, the project has identified the EAs that are most promising, and should therefore be developed first, at regional level, from the point of view of their usefulness for development policies. The next phases of the project will consist in the production of pilot regional EAs, selected among the ones with high priority, and in the definition of a line of development of regional EAs. The following elements characterise the project:

1. the "demand" side of information is "stimulated" through the direct dialogue with the supply side, on the basis of the knowledge of EAs, leading to the formulation of concrete requests rather than of general principle statements;
2. orientation towards the use of EA as a support tool for development policies focused on socio-economic targets. In this way a specific characteristic of EA information is exploited: while other environmental information tools simply describe environmental phenomena, EA describes systematically the interaction between economy and natural environment, according to a language that is as far as possible the same of economic analysis. This integration of information and language allows to tackle socio-economic problems and at the same time to analyse the evolution of

the environmental variables as a consequence of the development and to include the environmental variables as constraints/targets for development policies;

3. orientation at the policy-maker and his/her directly supporting staff as direct users of EA: the attempt is to respond to their information needs by showing which EAs contain the requested information and how to use it, so that they can make their policy design more compatible with environmental sustainability.

In the light of the methodological document recently discussed at the seminar hosted by CNEL, mentioned in § 2, the following conclusions can be drawn:

- EA is very useful in the phases of the policy decision process where the use of resources is programmed, i.e. when the choices concerning the allocation problems that characterise development policies are made (choice between forms of capital, territories, institutional and economic sectors);
- Some EAs are useful at all stages of programming, i.e. for all the different kinds of allocation decisions; this is the case of the EAs that favour a joint reading of economic and environmental data, such as the NAMEA and the SERIEE;
- Some EAs are useful mainly for some allocation decisions (choice between forms of capital and territories), such as EW-MFA and natural resource accounts, because they usually provide information not broken down by institutional and economic sectors;
- For all EAs it is possible to identify its suitable use in the programming phase by making explicit the information needs of the policy maker that it can satisfy;
- As far as the realization phase of policies is concerned, the EAs are mainly useful in as much as they provide average reference regional or national parameters, that can be used as benchmark in order e.g. to establish criteria for assigning investment grants to enterprises on the basis of sustainability principles (for example, the NAMEA provides parameters such as the emissions per employee or per value added unit by sector);
- All these possible utilisations exploit the data supplied by EA as descriptors of the "context";
- EA data can be used as such, as average reference parameters, or elaborated in order to model scenarios (e.g. NAMEA-based Input-Output analysis).

6. Concluding remarks

In Italy a strong interest in EA as a policy-support tool appears to be related to Local Government (see local authorities experimentations), or to the territorial dimension of policy choices (see Istat-MEF project). Table 2 summarises the Italian experiences, classifying them according to the kind of policies they are focused on and highlighting the respective strengths and weaknesses. In general, it can be stated that the correct use of EA is different according to the stage of policy it has to support. In the phase of policy design, it mainly provides indicators that describe the context, to which the effects that can be foreseen can be compared. In the realisation phase, EA can supply reference parameters for the selection of the sectors and territories to be privileged in the allocation of resources. For monitoring and evaluating policies, EAs provide the "context" data with which indicators measuring the effects of policies (resources, realisations, results, impacts) would have to be compared. EA data should be used for the evaluation of the environmental effects of policies in the same way as economic

accounts are used for the evaluation of the economic effects. Accordingly, the use of the definitions and classifications provided by the EA of official statistics for the description of the physical environmental effects of policies should be a common practice just in the same way as it is, for instance, the use of the statistical classifications of economic activities (NACE, ATECO) for classifying the firms who benefit of State financial aid (which allows the comparison with national accounting data e.g. for the analysis of the impacts of the same financial aid on the economy, on employment, etc.).

Table 2: **Characterisation of the Italian experiences on EA as a policy support tool**

Experience	Kind of policies supported	Possibilities of use for policy design and assessment	
		Strengths	Weaknesses
CONTARE	Environmental policies	• Official statistics' environmental accounting standards are adopted and consistently applied; • Introduces an articulated system for the measurement of the effects of policies, comparable with EA data referred to the context.	• The system of guided analysis of the results is too complex, more suitable for an expert than for a policy-maker
Local governments' (provinces, municipalities) EA experimentations (promoted in framework of Agenda XXI, CLEAR, etc.)	Environmental policies	• Very easy to read; • Suitable for communication (accountability).	• Does not adopt the standards of official statistics; • Includes only indicators of "context" and of local government's expenditure • Does not allow the evaluation of policies.
Istat-MEF project	Development policies	• Official statistics' environmental accounting standards are adopted and consistently applied; • Allows to take into consideration the environmental effects of various real policy decisions (allocation problems) and to evaluate them vis-à-vis to the reference context	• Limitation to regional development policies

Legenda: Environmental policies: the target variables are environmental phenomena;
Development policies: the target variable is some form of capital to be enhanced.

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